***Scope***

**Azlina**

Explaining in brief by **commenting** on the program to expose a program in more friendly way for beginner. Putting appropriate comments on every important line code is crucial for the next programmer to understand certain part of code for.

**Variables** is fundamental in a program. By using appropriate variables, program able to store information to be referenced and alter in a computer program. It can provide a way of grouping data with a different name and help a programmer to identify each variable. In short, variables only purpose is to label and store data in a memory and it will be use until the end of program.

**Code identation** is very important in a program as it can be defines as the way to organize and document your source code. Code identation is a part of source code. If we follow proper style guide and indentation then a program will be easy to understood by normal user. As we know a proper code indentation will make it easy to:

Read

Understand

Maintain

Enhance

Modify

**Hatikah**

**Formula** is a backbone of a program, without it, it would be hard to a program to process the data. Calculation and formula is written by Hatikah to solve a problem in sorting arrays. The project requires us to sort the array in ascending order and Hatikah as part of our team had come up with an idea to solve the problem given, by passing the values and compare which values is lower. Not to mention the quantity value can be alter after the user decided to sell the item.

Appropriate formatting output like setw and setprecision can be use to align the text and make the menu much more readable than it actually is.

* C++ manipulator **setprecision** function is used to control the number of digits of an output stream display of a floating- point value.
* The C++ function **setw** behaves as if member width were called with n as argument on the stream on which it is inserted/extracted as a manipulator (it can be inserted/extracted on input streams or output streams). It is used to sets the field width to be used on output operations.

Diagram

Description automatically generated

**If…else statement** can be use in the program if there is a requirement before executing the certain part of the program. Switch also behave same as if..else statement but nested if..else open a new way of how the program reads the data.

**Haikal**

Diagram

Description automatically generated

A **loop is used** for executing a block of statements repeatedly until a particular condition is satisfied. For example, when you are displaying number from 1 to 100 you may want set the value of a variable to 1 and display it 100 times, increasing its value by 1 on each **loop** iteration.

A loop can be used for executing a statement until a particular condition meets is requirement that satisfied the loop. When you are displaying an integer from 1 to 10, if you want to set the value of variable to 1 and display it 10 times. You can increase the variable by 1 until it reaches 10 and stop.

Other type of loop that can be use is:

* For Loop
* While loop
* Do…While loop

**Counter controlled loop** is known as a definite repetition loop, the number of iterations is know even before the loop starts, the value is set by the reader that knows how many times the loop want to be repeated.The control variable can be modified if the programmer decided to increase or the deacrese the number of loop. If the variable doesn’t increase or decrease, the loop will repeat infinite amount of times.

**Sentinel controlled loop** will be repeating until the user decide to input a false statement. For and example, if the programmer put number 4 as the reason to stop the loop, the user can exit the loop by entering 4. Repetition of indefinite loop is not known in advance on how many times the loop will be run. A sentinel value is a indicator for end of data entry, it is also called as signal value or a dummy value to show that loop will stop if the user enter the dummy value.

**String** and **arrays** is almost the same but array size is fixed meanwhile string is not and can have a variable number of elements. Arrays only can obtain char, short,int. Strings are ASCII characters. Strings can be use to process the character in sequence from start to end.

***Flowchart***

**Diagram, engineering drawing

Description automatically generated**